FIT5031
Mobile software agents

Unit Guide

Semester 1, 2013

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

Last updated: 04 Mar 2013
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FIT5031 Mobile software agents - Semester 1, 2013

This unit focuses theoretical concepts, applications and research issues of mobile software agents. Students will learn techniques to design and develop mobile agent applications. A number of different toolkits/development environments will be discussed and used for the practical component of the unit. The unit analyses mobile software agents technology with respect to their use in different application domains - focusing on pervasive applications, electronic commerce/web services and distributed data/network management. Advanced research issues/topics such as communication, coordination, security and trust for mobile agent systems will also be presented.

Mode of Delivery
Caulfield (Day)

Contact Hours
2 hrs lectures/wk, 2 hrs laboratories/wk

Workload requirements
Students will be expected to spend a total of 12 hours per week during semester on this unit as follows:

For on-campus students:
Lectures: 2 hours per week
Tutorials/Lab Sessions: 2 hours per week
and up to an additional 8 hours per week for completing lab and project work, private study and revision.

Unit Relationships

Prohibitions
CPE5010

Prerequisites
Recommended Knowledge: It is assumed that all students have a working knowledge of fundamental Java programming.

Chief Examiner
Dr Grace Rumantir

Campus Lecturer
Caulfield

Dengsheng Zhang

Tutors

Caulfield

He Li
Academic Overview

Learning Outcomes

At the completion of this unit students will:

- be conversant with the principles and theoretical concepts of mobile software agents;
- appreciate models and approaches to building mobile agent systems;
- demonstrate knowledge of different mobile agent toolkits and development environments;
- utilise techniques for achieving mobile agent communication and coordination;
- understand security issues in mobile agent systems;
- select and apply appropriate tools for a particular application;
- foster critical and independent analysis of how mobile agents can be applied to distributed computing applications.
# Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>No formal assessment or activities are undertaken in week 0</td>
</tr>
<tr>
<td>1</td>
<td>Introduction to Agents and Mobile Agents</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mobile Agent Applications</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mobile Agent Toolkits and Development Environments</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Mobile Agent Modelling</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Mobile Agent Security</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Software Agent Architectures</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Unit Test (in the lecture time slot - tute still on)</td>
<td>Unit Test (in Week 7 Lecture)</td>
</tr>
<tr>
<td>8</td>
<td>Multi Agent Architectures</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Agent Communication Languages</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Agent Coordination Protocols</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Agent Oriented Software Engineering</td>
<td>Assignment due</td>
</tr>
<tr>
<td>12</td>
<td>Revision</td>
<td>Assignment interview</td>
</tr>
<tr>
<td></td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken in SWOT VAC</td>
</tr>
</tbody>
</table>

*Unit Schedule details will be maintained and communicated to you via your learning system.

## Assessment Summary

In-semester assessment: 50%; Examination (3 hours): 50%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Test</td>
<td>15%</td>
<td>Week 7</td>
</tr>
<tr>
<td>Assignment - Practical Project</td>
<td>35%</td>
<td>Week 11</td>
</tr>
<tr>
<td>Examination 1</td>
<td>50%</td>
<td>To be advised</td>
</tr>
</tbody>
</table>

## Teaching Approach

**Lecture and tutorials or problem classes**

This teaching and learning approach provides facilitated learning, practical exploration and peer learning.
Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at http://lib.monash.edu/tutorials/citing/

Assessment Tasks

Participation

• Assessment task 1

  Title: 
  Unit Test
  
  Description: 
  The unit test will be conducted during the Week 7 lecture time slot. Week 7 tutorials will still run as per normal.
  
  Weighting:
  15%
  
  Criteria for assessment:
  Correct answers to questions and quality of solutions to problems which demonstrate understanding of the learning material.
  
  Further details on the coverage and format of the unit test will made available on Moodle.
  
  Due date:
  Week 7
  
  Remarks:
  The unit test will be conducted in Week 7 lecture time slot. Week 7 tutorial will still run.

• Assessment task 2

  Title: 
  Assignment - Practical Project
  
  Description: 
  You will be given a specification that you will need to implement using the JADE mobile agent toolkit. You will need to have sound knowledge of Java fundamentals in order to program the system. This is a group assignment. You will implement the system in groups of two people. You will have a demonstration and interview in the week following the submission.
  
  Weighting:
  35%
  
  Criteria for assessment:
  In Week 12 demonstration/interview both team members will need to demonstrate complete familiarity with the system/code and will need to individually change parts of the system as required by the tutor. Inability to demonstrate understanding, familiarity and competent programming skills will result in loss of marks for the individual.
  
  Due date:
  Week 11
Assessment Requirements

Examinations

- Examination 1

  Weighting: 50%
  Length: 3 hours
  Type (open/closed book): Closed book
  Electronic devices allowed in the exam: None

Learning resources

Monash Library Unit Reading List
http://readinglists.lib.monash.edu/index.html

Feedback to you

Types of feedback you can expect to receive in this unit are:

- Graded assignments with comments
- Interviews
- Test results and feedback

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process:

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Assignment submission

It is a University requirement (http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at http://www.infotech.monash.edu.au/resources/student/forms/. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz).
Assessment Requirements

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the learning system for this unit, which you can access via links in the my.monash portal.

Required Resources

Please check with your lecturer before purchasing any Required Resources. Limited copies of prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

JADE software toolkit. Students can download this free software from:

http://jade.tilab.com/
Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University’s academic standards, and to provide advice on how they might uphold them. You can find Monash’s Education Policies at: www.policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Plagiarism; http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html
- Special Consideration; http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.html
- Grading Scale; http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html
- Discipline: Student Policy; http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html
- Academic Calendar and Semesters; http://www.monash.edu.au/students/dates/
- Orientation and Transition; http://intranet.monash.edu.au/infotech/resources/students/orientation/
- Graduate Attributes Policy http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.html

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at http://www.monash.edu.au/students. For Sunway see http://www.monash.edu.my/Student-services, and for South Africa see http://www.monash.ac.za/current/.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to www.lib.monash.edu.au or the library tab in my.monash portal for more information. At Sunway, visit the Library and Learning Commons at http://www.lib.monash.edu.my/. At South Africa visit http://www.lib.monash.ac.za/.
Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

Website: http://www.monash.edu/equity-diversity/disability/index.html
Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway
Email: dlu@monash.edu
Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through the Student Evaluation of Teaching and Units (SETU) survey. The University’s student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash’s educational strategy, see:

www.monash.edu.au/about/monash-directions and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

This unit was run in Semester 1, 2012 and the feedback was quite positive.

If you wish to view how previous students rated this unit, please go to